

Knowledge and Behavior of Personal Hygiene among Elementary School Children; Cross-sectional Study

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ABSTRACT

OBJECTIVE: This study aims to examine the correlation between knowledge and personal hygiene behavior among elementary school children.

METHODOLOGY: This study employed a quantitative descriptive approach with a cross-sectional design. It recruited 138 respondents through total sampling. Data collection involved administering validated questionnaires on knowledge and personal hygiene behavior. The data were then analyzed using the Spearman rank correlation test to assess the relationship between these variables.

RESULTS: Findings indicated a significant positive correlation between knowledge and personal hygiene behaviors among elementary school children ($p = 0.001$, $r = 0.279$), suggesting that higher levels of knowledge were associated with improved hygiene practices.

CONCLUSION: Health professionals play a critical role in enhancing the personal hygiene behaviors of elementary school children by implementing educational interventions that boost knowledge. They can also facilitate collaboration with teachers, parents, and peers to motivate and monitor students' adherence to personal hygiene behavior, ensuring a supportive environment that reinforces these behaviors.

KEYWORDS: School-age children, personal hygiene, knowledge, and behavior

INTRODUCTION

Recent data from the Ministry of Women's Empowerment and Child Protection of Indonesia indicates a notable rise in health complaints among children, increasing from 24.68% in 2021 to 28.81% in 2022¹. This increase is attributable primarily to children's resumption of schooling and engagement in outdoor activities following the relaxation of COVID-19 restrictions, which has subsequently heightened their exposure to infectious disease transmission, particularly respiratory infections². As children's extracurricular activities increase, so does their susceptibility to pathogens, underscoring the critical importance of robust hygiene practices, particularly personal hygiene¹. Insufficient hygiene practices primarily contribute to the prevalence of infectious diseases among school-aged children, establishing the necessity for effective intervention strategies to mitigate exposure risks³.

In low- and middle-income countries, including Indonesia, the adequacy of hygiene and sanitation

facilities in schools must be improved⁴. This lack of proper facilities exacerbates students' risk of contracting water, sanitation, and hygiene (WASH)-related diseases, which can increase among peers, family units, and the larger community⁵. The infectious diseases commonly encountered by school children in these settings include diarrhea, respiratory infections, intestinal worms, scabies, trachoma, and hepatitis, all of which have been demonstrated to correlate with poor hygiene practices⁶. Given this context, it is evident that education plays a pivotal role in curtailing the transmission of infections within educational environments⁷.

Empirical research has indicated that implementing hand hygiene programs within educational institutions substantially decreases infection rates, particularly concerning respiratory and gastrointestinal infections and diseases⁸. Comparative studies conducted across various countries suggest that promoting handwashing among schoolchildren markedly reduces the incidence of respiratory and helminth infections^{9,10}. Children in the elementary school age range (6–12 years) are particularly vulnerable to infectious diseases, as they spend considerable time engaging in outdoor activities while often lacking consistent personal hygiene habits¹¹. Maintaining personal hygiene-including hair and skin care and hand hygiene practices-is critical in enhancing physical health and psychological well-being, yielding comfort, confidence, and disease prevention

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benefits^{12,13}.

Despite existing knowledge, more research should focus on hygiene practices among elementary school children in Indonesia, particularly within the post-COVID-19 framework¹⁴. Furthermore, studies are scarce investigating how knowledge and behavior regarding hygiene practices impact health outcomes among Indonesian schoolchildren, especially in regions such as Aceh Province, where socio-cultural and economic factors may influence hygiene behaviors^{4,15}. Previous research has underscored the effectiveness of hygiene interventions globally; however, their specific effectiveness and implementation within the Indonesian context—particularly in confronting local challenges in the post-pandemic landscape—requires further exploration^{13,16}. This identified gap signifies an urgent need for targeted research to elucidate the relationship between knowledge and hygiene behaviors among Indonesian schoolchildren, thereby informing the development of culturally appropriate and effective health interventions¹⁷.

This study addresses this gap by exploring the relationship between knowledge and personal hygiene behaviors in Aceh Province, Indonesia elementary school children. By examining this relationship, the research seeks to provide valuable insights into the formulation of targeted health education programs, which could enhance personal hygiene behavior and, in turn, reduce the transmission of infectious diseases among school-aged children in Indonesia.

METHODOLOGY

Study Design

The current study's design employs a correlational descriptive framework utilizing a cross-sectional study approach. Concurrently, data collection on knowledge variables and personal hygiene behaviors was executed. This study was conducted from Aug 26 to 31, 2024, commencing with acquiring parental consent and administering questionnaires.

Population and Sample

The subject population for this study consisted of 184 elementary school children enrolled in grades 2, 3, and 4 at SDN Rumpet and Lam Ujong, located in the Krueng Barona Jaya District. The sample was selected based on specific inclusion criteria: children who were willing to participate, had received parental permission, and exhibited no limitations in communication or behavior. A total sampling technique was employed due to the relatively small population size, facilitating generalization with minimal error. Informed consent sheets were distributed to the parents or guardians of all prospective respondents one day before data collection. Each participant was asked to ensure that these sheets were signed by their parents or guardians and returned on the day data collection commenced. Ultimately, 138

individuals participated in the study. Of the initial sample, 46 did not satisfy the inclusion criteria, which included one participant with communication limitations, 34 who did not obtain parental consent, three who failed to return the informed consent sheets, and eight who were absent on the data collection day.

Instrument

The instrument designed to evaluate personal hygiene knowledge employs a questionnaire structured as a dichotomous scale comprising 24 items, with response options of true and false. Conversely, the instrument for assessing personal hygiene behavior utilizes a questionnaire formatted as a Likert scale with 18 items that offer response choices of always, often, sometimes, and never. Researchers developed this research instrument based on findings from existing literature. Furthermore, the instrument underwent thorough construct validity and reliability assessments.

The construct validity evaluation was performed at Lamreung Public Elementary School, located in the Krueng Barona Jaya District, involving a sample of 68 respondents. The outcomes of the construct validity assessment were considered valid at a significance level of 5% when the *r* count exceeded 0.235. The items deemed invalid for the personal hygiene knowledge assessment included numbers 1, 10, 12, and 19. In contrast, item 18 was identified as invalid for the personal hygiene behavior instrument. All invalid items were discarded except for item 19 due to its critical relevance to personal hygiene knowledge. The reliability testing for the personal hygiene knowledge and behavior instruments yielded Cronbach's alpha values of 0.7 and 0.72, respectively, affirming the reliability of both instruments.

Data Analysis

The data analysis conducted in this study utilized IBM SPSS Statistics software, a widely recognized tool for statistical analysis in academic research. Before executing the bivariate analysis, the researchers performed a statistical normality test to assess the distribution characteristics of the data. This normality assessment yielded a *p*-value of less than 0.05, indicating a significant deviation from normality and thus confirming that the data was not normally distributed. Consequently, the researchers opted for a non-parametric approach to analysis, explicitly employing the Spearman rank correlation test, which is suitable for analyzing relationships between variables that do not meet the assumptions of parametric tests. Additionally, the decision to use this correlation test was grounded like the measurement scale of the two variables under investigation, which was determined to be of a ratio scale, further justifying the use of the Spearman test in this context.

Ethical Statement

Data collection commenced following the approval of an ethics review by the Research Ethics Committee at the Faculty of Nursing, Universitas Syiah Kuala,

referenced by approval number 113018280624.

RESULTS

Table I illustrates that a significant majority of the respondents in this study identify as female, comprising 54.35% of the total sample. Furthermore, the predominant age groups among the respondents are those 8 and 9 years old, collectively accounting for 27.54% of the participants. The median scores for the knowledge regarding personal hygiene and personal hygiene behavior are recorded as 18 and 37, respectively, as presented in **Table II**. These findings suggest that the respondents' overall level of knowledge and the practice of personal hygiene behavior can be classified as relatively satisfactory. Moreover, **Table III** indicates a noteworthy correlation between personal hygiene knowledge and personal hygiene behavior variables, as evidenced by a significance value of less than 0.05. The strength of the correlation is characterized as moderately strong and positive, with a correlation coefficient of 0.279. It is important to note that, despite the observed significant correlation between these variables, the correlation coefficient indicates a relatively low level of correlation. This outcome suggests that while a relationship exists between personal hygiene knowledge and personal hygiene behavior, additional factors likely influence personal hygiene behavior, which is not entirely elucidated by the knowledge variable alone.

Table I: Characteristic Respondents

Characteristics	F	%
Gender		
Female	75	54.35
Male	63	45.65
Age (Years)		
7	33	23.91
8	38	27.54
9	38	27.54
10	27	19.57
11	2	1.45

Table II: Description of Knowledge and Behavior Scores Related to Personal Hygiene (Self Care) in elementary school children (n=138)

Variable	Median	Minimum - Maximum Value
Personal Hygiene Knowledge	18	0-24
Personal Hygiene Behavior	37	0-54

Table III: Relationship between Knowledge and Personal Hygiene Behavior in Elementary School Children (n=138)

Variable	Personal Hygiene Behavior	
	R	P-Value
Knowledge	0.279	0.001

DISCUSSION

This study reveals that elementary school children exhibit a commendable understanding of personal hygiene, primarily attributed to their exposure to hygiene education facilitated by the School Health Department Unit, known as "Usaha Kesehatan Sekolah (UKS)." Previous research identified a statistically significant correlation between UKS activities and adopting clean and healthy living behaviors, with a P-value of 0.000 and $\alpha < 0.05$ ¹⁸. The establishment of UKS aims to enhance students' capabilities to engage in a clean and healthy lifestyle, develop health-related skills, and foster positive social interactions, thereby promoting optimal and harmonious growth towards becoming a quality generation. UKS primarily encompasses three core activities: health education, health services, and promoting a healthy school environment¹⁹. Health education consists of various initiatives designed to give individuals essential health knowledge, empowering them to take informed health actions and bolstering their motivation to adopt specific health behaviors²⁰.

Consequently, elementary school children's knowledge of personal hygiene is robust, as they have benefitted from health education activities within the UKS framework. However, qualitative research conducted in East Nusa Tenggara, Indonesia, indicated that infrequent UKS activities adversely affect students' hygiene, emphasizing the integral role of UKS in fostering personal hygiene practices²¹. Within the UKS framework, teachers play a pivotal role, including delivering information, conducting assessments, monitoring, and guiding students in achieving independent cleanliness¹⁹.

Moreover, the analysis of personal hygiene behavior among the surveyed elementary school children predominantly yielded positive outcomes. Personal hygiene encompasses cleanliness, including skin, nails, hair, ears, nose, oral cavity, teeth, clothing, footwear, and handwashing practices before meals^{12,13}. Notably, the findings demonstrate that a significant proportion of children engage in oral hygiene practices, with 49.3% brushing their teeth twice daily, 77.5% bathing at least twice daily, and 62.3% washing their hair a minimum of twice a week. Additionally, 62.3% consistently wash their hands with soap before meals, while 67.4% wash their hands post toilet use, 42% wash their hands after play, and 50% wash their hands after handling potentially unclean objects. Furthermore, 52.2% ensure to cut and clean their nails at least once weekly.

The favorable personal hygiene behaviors observed among elementary school children can be attributed to their well-established knowledge of personal hygiene practices²². Research findings demonstrate a significant positive correlation between knowledge and personal hygiene behavior, indicating that an enhanced understanding of personal hygiene

correlates with increased adherence to hygienic practices. This assertion is consistent with previous studies that established a significant relationship between levels of knowledge and personal hygiene behavior ($p = 0.016 < 0.05$ and $r_s = 0.358$)²³, as well as other research identifying a notable association between knowledge and hygiene practices among elementary school children ($P = 0.002 < 0.05$) 0.005²². In conclusion, knowledge regarding personal hygiene constitutes a vital determinant of behavior. Lawrence Green's theoretical framework elucidates that various factors influence health behavior, encompassing predisposing factors (such as age, occupation, education, knowledge, and attitudes), enabling factors (such as availability of health facilities), and reinforcing factors (such as support from family, schools, and the broader community)²⁴. Thus, the findings of this study corroborate the significant connection between knowledge and practical hygiene behavior among students. Knowledge is a predisposing factor influencing individual behavior and emerges from experiential learning, ultimately informing decision-making and guiding actions leading to behavioral outcomes²⁰. Furthermore, the UKS operates as a platform to advocate for personal hygiene practices, creating an environment conducive to cultivating good behaviors among elementary school children. The availability of enabling factors, which exist outside the individual yet manifest within the physical environment, further supports positive health behaviors, such as the availability of health facilities²¹. A noted limitation of this study includes the potential influence of extraneous factors on the behavioral outcomes analyzed. Despite the researchers' efforts to mitigate bias, interactions among respondents and confounding variables may have impacted the study's findings. Therefore, it is recommended that future research endeavors adopt more rigorous methodologies, such as implementing direct interventions, to enhance the understanding of factors influencing personal hygiene behaviors.

CONCLUSION

In conclusion, fostering good personal hygiene behavior among elementary school children significantly depends on their understanding of hygiene principles. Hence, integrating health education into the curriculum is vital for enhancing health literacy in students. To achieve this, schools and health professionals should focus on optimizing the UKS. Effective strategies include regular health education initiatives in partnership with health centers, ensuring adequate sanitation facilities, and promoting peer education through collaborative study groups on personal hygiene facilitated by the UKS. Additionally, the engagement of parents is crucial in overseeing and reinforcing hygienic behaviors at home.

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AUTHOR CONTRIBUTION

Harahap IM: Formulated the idea and research design, supervised literature review, data analysis, and manuscript preparation.

Arnita Y: Data analysis and data interpretation.

Rizkia M: Responsible for collecting literature, reviewing concepts, and editing the manuscript. All authors have contributed significantly to the study and agreed to be responsible for aspects of the work.

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